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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,512	10/12/2001	David S. Allison	0007056-0197/P5940	3988

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EXAMINER

VU, TUAN A

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,512

Applicant(s)

ALLISON, DAVID S.

Examiner

Tuan A Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20020806
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the application filed October 12, 2001.

Claims 1-10 have been submitted for examination; and drawings filed 2/12/2002 are also admitted.

Claim Objections

2. Claims 1 and 6 are objected to because of the following informalities: the ‘,’ after ‘comprising’ (line 4 of cl. 1; line 8 of cl. 6) appears to be an incorrect punctuation mark, and should be a ‘:’.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosworth et al., USPN: 6,738,968 (hereinafter Bosworth), in view of Chambers et al., “An Efficient Implementation of SELF, a Dynamic-Typed Object-Oriented Language Based on Prototypes”, In OOPSLA '89 Conference Proceedings, New Orleans, LA, Published as SIGPLAN Notices 24(10), October, 1989 (hereinafter Chambers – pp. 57-95).

As per claim 1, Bosworth discloses a method for binding an object member at runtime comprising:

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declaring said object member (e.g. Fig. 3-4) in a program written in a dynamically linked object-oriented programming language (see *C++*, *JIT* - col. 5, lines 11-25; *class Rect* -col. 6, lines 1-10), and running said program comprising:

determining whether said object member is used (e.g. Fig. 6-8); and
binding said object member to its reference if said object member is used (e.g. Fig. 6-8).

But Bosworth does not disclose that the program is written in a dynamically-typed programming language. The use of analysis to help optimization of dynamic dispatch or late binding in object-oriented language was a known concept in the art of compiling at the time the invention was made. In a method to support runtime binding and object-oriented program optimization with enhancement supporting dynamic binding analogous to the dual type technique by Bosworth, Chambers discloses the use of message splitting to help dynamic type mapping (e.g. chp. 5.4 – pg. 77 – Note: duality of decision in type resolution as in Chambers' splitting predicates is equivalent to dual type provision by Bosworth) and discloses SELF being written in dynamically-typed programming language. It would have been obvious for one of ordinary skill in the art at the time the invention was made to apply the object-oriented programming dynamic binding used by Bosworth in program written in dynamically-typed language as taught by Chambers because only dynamic typed language need optimization in late binding in addition to known complications that come with polymorphism and parent-child hierarchy mapping drawbacks in OO language (see Chambers Introduction pg. 58; and also in instant Invention Specifications, as admitted prior art – see Specifications, pg. 5-9).

As per claim 2, Bosworth (in conjunction with Chambers) discloses that object member is a class member of said dynamically typed programming language (e.g. Fig. 3B).

As per claim 3, Bosworth (in conjunction with Chambers) discloses that object member is a class method (e.g. Fig. 3b; col. 11, line 28 to col. 12, line 59).

As per claim 4, Bosworth (in conjunction with Chambers) discloses that the class method is a virtual method (e.g. step 712 – Fig. 7; step 808 - Fig. 8).

As per claim 5, Bosworth (in conjunction with Chambers) does not explicitly disclose using an access control level wherein a public member and a private member have different access rights. Official notice is taken that object-oriented declaring public and private attribute for dictating access right control over different classes was a well known concept at the time the invention was made. Hence, in view of the object-oriented aspect and the rationale to use the optimized binding technique as set forth in claim 1, the teachings of enabling public or private element inside of object-oriented object declaration to facilitate access control exercised via class inheritance is implicitly disclosed.

As per claim 6, Bosworth discloses a computer useable medium having computer readable program code embodied therein configured to bind an object member at runtime, said computer program product comprising computer readable code configured therein to cause a computer to perform the steps:

to declare (object member...);

to determine (... object member is used); and

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to bind (object member to its reference) exactly as recited in claim 1 above.

Hence these above limitations are rejected with the corresponding rejection as set forth above therein, including the rationale using Chambers to address the dynamically-typed programming language limitation.

As per claims 7-10, these claims correspond to claims 2-5, respectively, hence are rejected with the corresponding rejections as set forth therein.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (703)305-7207. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or: (703) 746-8734 (for informal or draft communications, please consult Examiner before using this number)

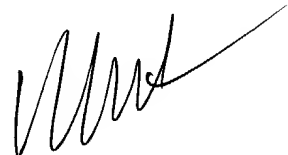
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA. , 22202. 4th Floor(Receptionist).

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VAT

September 18, 2004



ANIL KHATRI
PRIMARY EXAMINER